

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings of claims in the application:

#### **Listing of Claims:**

Claims 1-10 (Canceled)

Claim 11 (New): A pulse height analyzer for determination of the pulse height distribution of electronic pulses, comprising:

a set of comparators with a common input for analog to digital conversion of the electronic pulses,

a set of latches wherein the inputs of the latches are connected to the outputs of respective comparators for recording passage of the corresponding threshold voltages by the rising edge of a pulse,

a priority encoder connected to the latch outputs for determination of a pulse height category consisting of pulses with a pulse height within a pulse height interval defined by respective threshold voltages, and

a micro controller that is adapted to count the number of pulses within each pulse height category.

Claim 12 (New): A pulse height analyzer according to claim 11, wherein the thresholds of the comparators are non-equidistant.

Claim 13 (New): A pulse height analyzer according to claim 11, further comprising a filter for filtering the electronic pulses providing a substantially constant delay from pulse start to maximum pulse amplitude of the filtered pulse, and for provision of the filtered pulses to the common input of the comparators.

Claim 14 (New): A pulse height analyzer according to claim 11, further comprising a filter for filtering the electronic pulses providing an output signal containing the filtered pulses with a DC-value substantially equal to zero.

Claim 15 (New): A pulse height analyzer according to claim 11, further comprising a current source, preferably a constant current source, for connection to electrodes contacting an electrolyte in two chambers mutually connected by an orifice for Coulter counting of particles, and wherein the thresholds of the comparators are dependent on the actual value of the generated electrode current whereby possible variations of the electrode current are substantially cancelled by corresponding variations of the thresholds.

Claim 16 (New): A pulse height analyzer according to claim 11, further comprising a plurality of sets of comparators for pulse height determination of input pulses of different amplification.

Claim 17 (New): A pulse height analyzer according to claim 11, further comprising circuitry for resetting the latches a predetermined time period after start of a pulse, the time period being independent of the pulse height and the pulse width.

Claim 18 (New): An integrated circuit comprising a pulse height analyzer according to claim 11.

Claim 19 (New): A field programmable gate array comprising a pulse height analyzer according to claim 11.

Claim 20 (New): An application specific integrated circuit comprising a pulse height analyzer according to claim 11.